CALIFORNIA GRUNION FACTS

Grunion (*Leuresthes tenuis)* are members of the silversides family, Atherinidae, along with the jacksmelt and topsmelt. They normally occur from Point Conception, California, to Point Abreojos, Baja California. Occasionally, they are found farther north to Monterey Bay, California and south to San Juanico Bay, Baja California. They inhabit the nearshore waters from the surf to a depth of 60 feet. Tagging studies indicate that they are nonmigratory.

Grunion are the object of a unique recreational fishery. These fish are famous for their spawning behavior that is so remarkable that it evokes an "I don't believe it" response from someone who hears about it for the first time.

Grunion leave the water at night to spawn on the beach in the spring and summer months two to six nights after the full and new moons. Spawning begins after high tide and continues for several hours. As a wave breaks on the beach, grunion swim as far up the slope as possible. The female arches her body and excavates the semifluid sand with her tail to create a nest. She twists her body and digs until she is half buried in the sand with her head sticking up. She then deposits her eggs in the nest. Males curve around the female and release milt. The milt flows down the female's body until it reaches and fertilizes the eggs. As many as eight males may fertilize the eggs in a nest. After spawning, the males immediately retreat toward the water while the female twists free and returns with the next wave. While spawning may take only 30 seconds, some fish remain stranded on the beach for several minutes.

Spawning occurs from March through August, and occasionally in February and September. Peak spawning period is between late March and early June. Once mature, an individual may spawn during successive runs at about 15-day intervals. Females can spawn as many as six times during a season. Mature females lay between 1,600 and 3,600 eggs during one spawn, with the larger females producing more eggs.

The eggs are deposited during the highest tides of the month and incubate in the sand during the lower tide levels, safe from the disturbance of wave action. The eggs are kept moist by residual water in the sand. The eggs hatch during the next high tide series when they are inundated with sea water and agitated by rising surf. This occurs after about 10 days.

You can watch grunion eggs hatch by collecting a cluster of eggs after a grunion run and keeping them in a loosely covered container of damp sand in a cool spot for 10-15 days. Then, add one teaspoon of sand and eggs to one cup of sea water and shake gently; the eggs will hatch before your eyes in a few minutes.

Most grunion seen on southland beaches are between 5 and 6 inches long. Some are as long as 7 inches. An average one-year old male is 4.5 inches long while a female is slightly larger at 5.0 inches. At the end of two years, males average 5.5 inches and females are about 5.8 inches long. By the end of three years, an average male is 5.9 inches and a female is 6.3 inches in length. Few live to be older than 3 years. Grunion mature and spawn at the end of the first year.

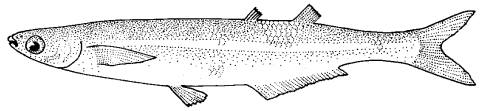
Grunion food habits are not well known. They have no teeth, so they are presumed to feed on very small organisms. Shore birds, isopods, flies, sand worms, and beetles eat grunion eggs. Humans, larger fish, and other animals prey upon grunion itself.

Despite local concentrations, grunion are not abundant. The most critical problem facing the grunion resource is the loss of spawning habitat caused by beach erosion, harbor construction, and pollution. By the 1920's the fishery was showing definite signs of depletion and a regulation was passed in 1927 establishing a closed season of three months, April through June. The fishery improved and in 1947 the closure was shortened to April through May. This closure is still in effect to protect grunion during the peak spawning period.

A fishing license is required for persons 16 years and older to capture grunion. Grunion may be taken by sport fishers using their hands only. No holes may be dug in the beach to entrap them. There is no limit, but take only what you can use. It is unlawful to waste fish. With these regulations, the resource seems to be maintaining itself at a fairly constant level. While the population size is not known, all research points to a rather restricted resource that is appropriately harvested under existing law.

While grunion spawn on many beaches in southern California, the Department of Fish and Game does not recommend any particular beach because of changing safety conditions and local curfews. One of the best ways to find out which beaches have had recent runs is to call the state and county beach lifeguards who can often tell if spawning has taken place. There is a grunion program offered to the public at Cabrillo Beach in San Pedro on several nights of the season. Call (310) 548-7562 for details.

Research and management of the grunion by the California Department of Fish and Game is supported, in part, by the Federal Aid in Sport Fish Restoration Program.



EXPECTED GRUNION RUNS FOR 2004

OPEN SEASON

MARCH	8	Mo	10:20 PM - 12:20 AM*
	9	Tu	10:50 PM - 12:50 AM*
	10	We	11:30 PM - 1:30 AM*
	11	Th	12:15 AM* - 2:15 AM*
	22	Mo	10:05 PM - 12:05 AM*
	23	Tu	10:30 PM - 12:30 AM*
	24	We	10:55 PM - 12:55 AM*
	25	Th	11:20 PM - 1:20 AM*
JUNE	4	Fr	10:40 PM - 12:40 AM*
	5	Sa	11:30 PM - 1:30 AM*
	6	Su	12:30 AM* - 2:30 AM*
	7	Mo	1:35 AM* - 3:35 AM*
	19	Sa	10:30 PM - 12:30 AM*
	20	Su	11:05 PM - 1:05 AM*
	21	Mo	11:40 PM - 1:40 AM*
	22	Tu	12:25 AM* - 2:25 AM*
JULY	4	Su	11:25 PM - 1:25 AM*
	5	Mo	12:15 AM* - 2:15 AM*
	6	Tu	1:15 AM* - 3:15 AM*
	7	We	2:20 AM* - 4:20 AM*
	19	Mo	10:55 PM - 12:55 AM*
	20	Tu	11:30 PM - 1:30 AM*
	21	We	12:10 AM* - 2:10 AM*
	22	Th	1:00 AM* - 3:00 AM*
AUG	2	Mo	11:10 PM - 1:10 AM*
	3	Tu	MIDNIGHT - 2:00 AM*
	4	We	12:50 AM* - 2:50 AM*
	5	Th	1:50 AM* - 3:50 AM*
	17	Tu	10:40 PM - 12:40 AM*
	18	We	11:20 PM - 1:20 AM*
	19	Th	MIDNIGHT - 2:00 AM*
	20	Fr	12:55 AM* - 2:55 AM*
	31	Tu	10:55 PM - 12:55 AM*

* Where the time relating to the expected run is after midnight, the date of the previous evening is shown.

CLOSED SEASON-OBSERVATION ONLY

APRIL	7	We	11:15 PM - 1:15 AM*
	8	Th	11:55 PM - 1:55 AM*
	9	Fr	12:45 AM* - 2:45 AM*
	10	Sa	2:00 AM* - 4:00 AM*
	21	We	10:40 PM - 12:40 AM*
	22	Th	11:05 PM - 1:05 AM*
	23	Fr	11:35 PM - 1:35 AM*
	24	Sa	12:10 AM* - 2:10 AM*
MAY	6	Th	10:50 PM - 12:50 AM*
	7	Fr	11:40 PM - 1:40 AM*
	8	Sa	12:35 AM* - 2:35 AM*
	9	Su	1:50 AM* - 3:50 AM*
	20	Th	10:10 PM - 12:10 AM*
	21	Fr	10:40 PM - 12:40 AM*
	22	Sa	11:15 PM - 1:15 AM*
	23	Su	11:50 PM - 1:50 AM*

Note: The times given for each date reflect the **probable** two-hour interval during which a spawning run may occur. The second hour is usually better. The best runs normally occur on the second and third nights of the four-night period.

The times refer to the grunion runs **at Cabrillo Beach** near the Los Angeles Harbor entrance. The times of the runs vary along the coast. San Diego is about 5 minutes earlier and Santa Barbara is about 25 minutes later.

Times through **April 4th** are Pacific Standard Time. Thereafter, times are Pacific Daylight Saving Time.

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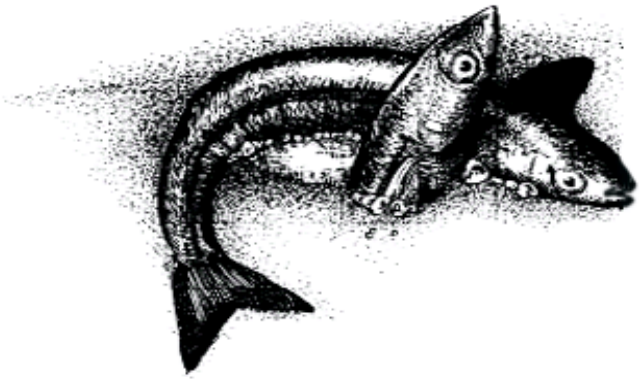
CALIFORNIA GRUNION FACTS AND EXPECTED RUNS FOR 2004



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CONSERVE ELECTRICITY

For a current schedule, send a self addressed stamped envelope to:

GRUNION
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